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BIPOLAR JUNCTION TRANSISTOR AND FABRICATING METHOD

Abstract

A bipolar junction transistor (BJT) includes a dielectric layer formed on a predetermined region of a substrate, an opening formed in the dielectric layer and a portion of the substrate being exposed, a heavily doped polysilicon layer formed on a sidewall of the opening to define a self-aligned base region in the opening, an intrinsic base doped region formed within the substrate and in a bottom of the opening by implanting through the self-aligned base region, a spacer formed on the heavily doped polysilicon layer to define a self-aligned emitter region in the opening, and an emitter conductivity layer being filled with the self-aligned emitter region and a PN junction being formed between the emitter conductivity layer and the intrinsic base doped region.